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ABSTRACT

Studies of vocational education and training (VET) students' movement into higher education (HE) typically show that VET students granted admission perform at least as well as other admitted applicants; however, such students are often less likely to gain admission in the first place. A move toward competency-based training (CBT) and a concomitant move toward ungraded means of reporting achievement have been among the key reforms implemented in Australia's VET system in recent years. Across Australia, universities have demonstrated a wide variety of responses to VET's introduction of CBT. Some universities have devised a system for converting VET results into a score that can be compared with the tertiary entrance score achieved by school leavers, whereas other universities have established distinct quotas for applicants seeking admission either as tertiary transfer students or on the basis of VET qualifications. Yet other universities have developed close working relationships with VET systems and devised a range of procedures to facilitate VET students' transfer to HE. Some VET providers are reviewing their policy of using only ungraded assessment and are introducing new criterion-referenced grading systems. It is hoped that the new systems will ameliorate many HE institutions' concerns over ungraded assessment. (Contains 31 references.) (MN)

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Moving into Higher Education

Issues arising from the introduction of ungraded assessment in VET

A paper prepared for the Ministerial Council on Employment, Education and Training

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Moving into Higher Education

Issues arising from the introduction of ungraded assessment in VET

A paper prepared for the Ministerial Council on Employment, Education and Training

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1. Background

This paper addresses the need to maximise the mobility of graduates from the vocational education and training (VET) sector wishing to enter university courses. It focuses on the selection of university entrants from among those applying for entry on the basis of VET qualifications and issues about admission and selection which have arisen with the introduction of ungraded assessment in many VET programs. While credit transfer is important, it is dependent on the applicant being offered a place in a course and is not the focus of this discussion.

Research-based information is not presently available as to whether or not the processes used by universities actually discriminate against VET graduates even inadvertently. The size of the population transferring from VET however is small, questioning the significance of the situation within the overall policy framework Nonetheless, the paper considers some options for how any potential discrimination may be avoided. Consideration is also given to the use of graded assessment for its possible value in improving admission.

1.1. VET entrants to Universities

While overall numbers remain small, changes are occurring in the numbers of VET students admitted to higher education with the total doubling in recent years. In addition, 1996 saw the introduction of an admissions target in universities for those "new to Higher education" which will include most of these seeking entry on the basis of their VET qualifications.

Studies of the movement of VET students into Higher education typically show that VET students granted admission perform at least as well as other admitted applicants (eg Alaba, Lewis & Dawes, 1993, Dobson, Sharma & Haydon, 1996). However, it appears that such students are often less likely to gain admission in the first instance.

Lewis (1995) examined admissions to universities in NSW and the ACT over the period 1991-1994. He found that over this period:

- competition for university places intensified, with a 5.2% increase in total University Admissions Centre applications and a 3.0% decrease in total offers of places;
- applications from students who had previously attended TAFE increased by 71.1% to 9153, those from Higher School Certificate students increased by 8.3% to 46273, while all other applications combined fell by 7.7%;
- former TAFE students increased from 6.3% to 10.2% of all applications;
- the share of total offers to former TAFE students increased from 5.5% to 8.8%;
- former TAFE students continued to find it harder than other applicants, especially HSC students, to gain admission: in 1994, 40.5% of HSC applicants, but only 31.2% of former TAFE students, received an offer to their first preference, while 70.2% of HSC applicants, but only 52.4% of former TAFE applicants, received an offer for any preference, although it should be noted that former TAFE students nominate fewer preferences than others [Note: policy requiring universities to meet certain school leaver targets operative at that time haa since been amended];

- former TAFE students are relatively unsuccessful in gaining admission to courses with higher Tertiary Entrance Rank cut-offs;
- applications and offer rates for former TAFE students vary significantly across universities: according to Lewis, 'while some variation may be explained by different course cut-offs, the courses offered and the location of the university, much of the variation is unexplained. Although the evidence is indirect, there is a concern that TAFE qualifications are not consistently evaluated across universities';
- academic performance at TAFE is an important determinant of success in gaining entry to university: in 1994, 56.1% of TAFE students with a Distinction award but only 19.5% with a Pass award received an offer to their first preference.

Dobson, Sharma & Haydon (1996) report that, across Australia in 1994, some 9,000 university entrants were admitted on the basis of TAFE qualifications. This group comprised 5.7% of all entrants and represents approximately 0.5% of all students enrolled in VET in that year (NCVER, 1995). Clearly, while VET systems give a high priority to ensuring their students have reasonable access to Higher education, the issues canvassed in this paper are not, of themselves, likely to drive their policy agenda.

1.2. Changing assessment/reporting practice in VET

The Vocational Education and Training (VET) System in Australia has undergone a number of significant reforms in recent years. Key amongst these has been the move towards a competency-based approach. The approach—as it has developed in Australia—has a number of features which are relevant to this paper:

- education and training programs are designed and developed around benchmarks—known as national industry competency standards—that are established by industry. These standards seek to define, in clear and unambiguous terms, the essential features of work performance which define competence at specified levels of employment. They include knowledge, skills, attitudes and other critical requirements.
- education and training programs are designed on a modular construction basis which provides for flexibility and for programs to be tailored to meet individual, local or enterprise needs. Wherever possible and appropriate, learning is designed to integrate skills, knowledge, attitudes and behaviour.
- assessment of learner outcomes has been recognised as a key element of a competency-based system and has been given considerable attention. This has included the conduct of two national assessment forums to discuss, debate and guide the introduction of competency-based assessment and the production of a series of publications funded by DEET which encapsulated the major directions (Rumsey, 1994, Hager *et al*, 1994 & Toop *et al*, 1994).
- certification of the achievement of competency occurs within the framework of a number of national agreements—especially, the National Framework for the Recognition of Training (NFROT) (VEETAC, 1991) and the Australian Qualifications Framework (AQF) (MCEETYA, 1995). These agreements specify the broad principles and establish guidelines within which vocational education and training courses are accredited, the title and nature of VET

qualifications and the processes for recognising the achievement of competencies.

Underlying all of these has been an understanding that the predominant purpose of the change to a competency-based system was to increase the quality of vocational preparation for the Australian workforce. In seeking to achieve this goal, governments, employers and unions had, largely, accepted the philosophical premise that competence was something which, either "you had or you didn't." Accordingly, the system was built around the conceptual notion that competence—as defined by the competency standards—was something which was achieved or was yet to be achieved. Grading and certification systems were thus developed to implement that basic understanding.

A key feature of the changes implied by the adoption of a competency-based system was a reaction against the perceived failure of existing approaches to deliver clearly defined and relevant outcomes. Significantly, this reaction became focused, at least in part, on the trappings of formal education. In the UK, for example, Jessup (1989) argued that vocational education and training had been dominated by "an educational model of assessment" concerned with "discrimination between individuals". As well as reducing the relevance of VET to employment, it was claimed that the prevailing practice had the effect of excluding from VET people not suited to an "academic" environment. One outcome of this was an argument for a shift away from a *norm-referenced* approach to assessment (in which the outcome for any given individual relies on the outcome of their peers. This, for example, is the case in which a fixed percentage of candidates are awarded "A", "B", "C" and "Fail" grades). Instead a *criterion-referenced* approach would be adopted. Here, candidates are compared to fixed, externally-defined and pre-set standards. A decision of "competent/not competent" is criterion-referenced with respect to the industry-defined competency standards. There are, however, good grounds for asserting that most VET assessment practice was already criterion-referenced but the imperative for change was so great that this view was not readily accepted.

During the formative stages of the development of the VET system now being introduced, the question of recognising excellence was frequently raised. Among the conceptualisations of excellence raised at that time was the notion that excellence was, inherently, embedded within the standards as these represented a level of achievement beyond that implied by a 50% pass". A second approach saw excellence as being recognised through training awards or special demonstration mechanisms. However, throughout most of the earlier discussions, there was also a clear linkage in the minds of most of those involved between competency-based approaches and self-paced instructional methods. In that light, an understanding developed (though it was not clearly documented or well-communicated to others) that excellence would be conveyed through learners having the opportunity to progress more quickly through programs and hence to progress to competence at higher levels.

This last approach was reinforced by concepts which eventually became embodied in the two national frameworks (NFROT and AQF). In the case of NFROT, the principles which encouraged VET courses to articulate and for multiple entry and exit points to be created have led to the development of collections of related courses which are hierarchically nested. The "level of achievement" of a learner, then, is reflected in their progression through the linked courses to their highest level of qualification achieved. Within courses, sequences of modules similarly exist which offer the opportunity for progression to higher levels of competence.

This conceptualisation was reinforced by the explicit linkage between the new VET qualifications established by the AQF and the hierarchy of workplace levels known as the Australian Standards Framework.

1.3. Other relevant changes in VET

Two other significant changes in the nature and structure of VET also have relevance to this issue.

The first relates to the growing decentralisation of TAFE administration. To date, university admission systems have been able to rely on all TAFE graduates from a particular course having results which are similarly defined. For example, in NSW all students in the Associate Diploma in Hospitality Management will have received graded results in all subjects. However, TAFE institutes are progressively being given greater control over their educational provision and, for example, in Victoria students in a given course may receive results which are ungraded, graded using letter grades or graded as "Distinction", "Merit", "Pass". This trend is encouraging universities in that state to focus on establishing admission arrangements with local VET providers rather than emphasising the establishment of system-wide arrangements.

Secondly, the change in terminology from TAFE to VET reflects a significant change in emphasis. The VET sector includes a range of providers quite different from those TAFE providers with whom universities have developed relationships in recent years. In particular, community providers, private commercial providers and enterprise-based providers are now able to issue nationally-recognised qualifications on the same basis as can TAFE providers. A fundamental aim of the recent reforms of the VET system has been the establishment of parity of status across the full spectrum of recognised providers. This change is not well-known within universities and its implications are only barely understood. This is not to say that non-TAFE providers are unable to develop individual arrangements with particular universities. However there is clearly no system-wide provision for the different groups within non-TAFE providers (indeed, even the DEET Higher education statistics collection only categorises transfers as from TAFE/from non-TAFE).

1.4. Emerging issues in University admissions

Universities, like the VET sector, have experienced many changes over recent years. At the forefront of these has been the simultaneous expansion of the university system with the incorporation of courses and institutions previously parts of the Advanced Education sector and the rapid growth in demand for university places.

This growth in demand has been evidenced both from Year 12 school leavers and from more mature applicants seeking to build on their life experiences or further education. As well, a growing number of tertiary students are seeking to transfer between institutions and courses. Universities have noted that students enrolled in courses—both in VET and in a number of universities—which do not provide graded results are potentially disadvantaged by this grading option. Within universities, the option of ungraded assessment being offered in some nursing and education programs for example, is now declining partly as a result of difficulties experienced in transfers to other programs and in selection for post-graduate programs.

Some key features in the emerging situation are worth noting.

Variation in response to CBT by universities

Across Australia, and within some states, universities have demonstrated a wide variety of responses to the introduction of competency-based training and the consequent provision of ungraded results for many VET programs.

For a number of universities, the approach adopted involves a system of converting VET results into a score which they can compare with the tertiary entrance score achieved by school leavers. Admission, then, is consequent on achieving a score greater than the specified cut-off point. In the main, the systems adopted by these universities have allocated increasingly higher scores to VET students whose average result in graded subjects was higher. Where subjects or modules are not graded, students' results are equated with the score allocated to a "pass" result in graded subjects. The effect of this is to provide the lowest possible score to students with significant numbers of ungraded results. Where students may in fact be performing well, the effect is to disadvantage them in seeking admission or in selection. For a number of universities, equating ungraded results to a "pass" enables applicants to gain admission only to certain programs. For two universities, ungraded results are not acceptable for admission at all.

Other universities have established distinct quotas for applicants seeking admission either as tertiary transfer students or, specifically, on the basis of VET (normally TAFE) qualifications. These may operate in respect of all programs or of certain targeted programs. Usually, admission requirements would be satisfied by VET students who had completed a qualification at a suitable level, irrespective of individual module results. In some cases, however, these quotas may also be filled by competitive selection and where this is so, a score is usually established in the same manner as outlined above. In some cases, Year 12 results are used to discriminate between similatrly qualified applicants.

For a further group of universities, close working relationships with VET systems have developed which aim to facilitate the transfer of VET students to the Higher education sector. In these universities, a range of different procedures have developed to build a diverse collection of information which is used to assist the university to be confident that the applicant can satisfy their requirements. These include the development of portfolios, use of teacher reports and the establishment of liaison committees.

Most universities regard the introduction of ungraded assessment (which they usually equate with CBT) as disadvantaging numbers of applicants. However, they do not see it to be their responsibility to apply further resources in seeking additional information, nor, in the main, would they welcome additional information being provided by individual applicants. Working already within tight timeframes, most would prefer the administratively simple solution of VET systems providing graded results for all modules.

Information supplied by VET

An issue noted by a number of universities has been the nature of the information provided to them by standard VET transcripts. In particular, universities have observed that, lacking any other information to the contrary, they have regarded all modules as being of equivalent significance in calculating the admission score for

VET transfer applicants. It is likely that this may distort the real picture in ways which may disadvantage some applicants.

Similarly, universities have relied in the past on transcripts which detailed both successful and unsuccessful attempts to complete subjects or modules. With the adoption of CBT, a number of VET systems have ceased to issue transcripts which report unsuccessful attempts. Again, universities believe that this distorts the true picture in ways which disadvantage the better academic performers.

In general it appears that, despite the significant activity of recent times in the credit transfer arena, there is still a need to develop greater awareness and understanding within both VET and higher education of the details of programs offered by the other sector.

A useful model to consider might be that employed in the AVCC Credit Transfer Project where, in twelve disciplines, a nationally-consistent approach to credit transfer was constructed. For example, university engineering schools and TAFE engineering providers met and discussed their programs, their character and purpose in some detail. This led to significantly improved understanding on both parts of the nature and strengths of the range of programs on offer. This information, while invaluable in determining credit transfer methods, has had less impact on setting admission arrangements.

Integrated programs

A related issue has been significant in many of the discussions between VET providers and universities around admission and credit transfer issues. It relates to the capacity of VET courses to provide preparation in the theoretical components—especially in Mathematics and the Sciences—which is necessary for successful performance in Higher education (see, eg, Alaba, Lewis & Dawes, 1993, p.78). The move towards CBT has the potential to exacerbate this concern unless carefully managed by both sectors.

A competency-based approach usually involves integrating the teaching and learning of both theory and practice to achieve a more holistic and useful outcome. Certainly there is considerable theoretical argument to support such an approach and, indeed, it is being adopted in many higher education programs as well (though not usually involving ungraded assessment). However, on a cursory inspection, the theoretical component of such courses is not readily apparent and this may lead to reluctance to accept such programs as providing the necessary underpinning knowledge or skills required for university admission. In the case of the AVCC project referred to above, careful examination of the relevant VET programs has provided a better understanding of the nature and level of knowledge developed in those courses. Some universities note that similar difficulties are beginning to arise with some of their own programs which have adopted this approach.

Issues identified by VET providers.

VET systems have generally not regarded the question of admission to university as one which warrants significant change to their systems. However, many VET systems report that they are now moving to introduce some optional form of grading in specific target areas. This has arisen from consumer demand—specifically from students and employers—rather than as a result of any difficulty with admission to

tertiary education. For both groups, the issue has principally been one of monitoring progress in learning and the need for clearer guidance in this area.

The specific approach being adopted in each state varies and, in most cases current policy is under review but not yet finally determined. In Victoria, for example, the matter is one for each College to determine separately. TAFE NSW is developing a uniform policy which would see course designers having the option to introduce criterion-referenced grading into specific courses. Queensland has agreed that a system of "performance reporting, consistent with CBT principles at the end of each stage/phase be developed for further consideration." SA DTAFE policy acknowledges that grading is a valid form of reporting for use by TAFE Institutes within a competency based syastem. Others are still reviewing their position.

1.5. Summary

Vocational education and training systems have been progressively moving towards a competency-based system and, as part of that process, have increasingly adopted ungraded means of reporting achievement. In the same period, the number of VET students seeking (and gaining) admission to universities has grown significantly. However, this group continues to represent only a small proportion of the total VET enrolment. Because of both the size of this group and a lack of reported difficulties, VET authorities do not regard this matter as one requiring urgent attention. It is worth noting, however, that the lack of difficulties to date arises partly as a result of the existence of many local admissions arrangements and partly reflects the progressive introduction of ungraded assessments.

Similarly, most universities advise that this is a problem only in prospect. Reactions to the introduction of ungraded assessment vary widely across universities and it is noted that many have limited awareness of the details of relevant VET programs or of other significant changes to VET including the increasing decentralisation of responsibility and the growing role of non-TAFE providers.

Finally, it is noted that VET providers are reviewing their policy of using only ungraded assessment and, in some cases, are introducing new, criterion-referenced grading systems. This is a significant change, the impact of which cannot yet be determined. However, it clearly has the capacity to ameliorate the concerns currently being expressed by universities and some TAFE authorities.

2. Principles and practice of selection

Selection is essentially a process of ranking. When more applications are received than there are places available, applicants are sorted on some set of criteria which the institution believes will best differentiate those applicants who will achieve "desirable" outcomes from those less likely to do so (Hawke & Sweet, 1983).

2.1. Principles of selection

A selection process, to be defensible, would be based on a rationale for what is done. This rationale would address the key features of a selection process, which are outlined as follows.

Purposes

A selection process for which the purposes cannot be stated would be difficult to defend.

If places were allocated to applicants randomly, the purpose of the process would be simply to fill available places without regard to the qualities of individual applicants. All applicants would have an equal chance of being selected.

Usually, however, selection is carried out to achieve one or more purposes that require distinguishing applicants from one another on the basis of their individual characteristics.

Selection can serve a number of purposes, not all of which may be consistent with one another. A common perceived conflict is that between purposes related to equity, on the one hand, and purposes related to excellence and to the efficient use of educational resources, on the other hand. 'The most needy may not be the most able, those who work the hardest may not accomplish the most, equal opportunity may not lead to equal reward, treating everyone as equals may not maximise the common good' (Deutsch, 1975, quoted in Messick, 1989). The clarification of the purposes of a given selection process may necessitate the reconciliation or balancing of diverse purposes.

Purpose informs the determination of selection criteria, the methods of assessing applicants against selection criteria, and the order in which offers are made to applicants.

Criteria

To achieve the purpose(s) for which selection is being carried out it is necessary to specify criteria against which individual applicants will be assessed.

The formulation or evaluation of selection criteria would focus on the validity of the criteria for the achievement of the purpose(s) of selection.

Evidence

Assessment of an applicant against the selection criteria requires the consideration of evidence.

The kinds of evidence that represent achievement of the criteria or that indicate different levels of performance on the criteria need to be clarified. However, a key requirement is that the evidence on which the selection is based has been demonstrated to be a good predictor of university performance. Given the complex nature of university performance, it is unlikely that any single measure will perform well. There are good reasons to believe that this is the case with current Australian university selection arrangements at least within certain discipline areas (eg see Lewis, 1994).

a) Methods of obtaining and evaluating evidence

A variety of methods may be used to obtain evidence for the assessment of an applicant. For example, the applicant may be required to:

- provide transcripts of his or her results in educational programs;
- provide references from teachers or employers;
- attend an interview;
- sit for a test;
- present a folio. Note: this method is being explored by some universities.

The choice of methods should be based on a consideration of the kind of evidence that needs to be collected and the practicability of various methods.

The determination of methods of evaluating particular evidence to assess individual applicants will be based on a consideration of the nature of the evidence, the criteria to which it relates, the extent to which applicants need to be differentiated from one another, and issues relating to validity and reliability.

The determination of the relative weight to be given to different kinds of evidence will be influenced by the purpose(s) for which selection is being carried out.

b) Methods of combining assessments of individual applicants and of comparing applicants with one another

The determination of the ways of combining the results of a number of assessments of an applicant, to provide a summary of the applicant's performance and to provide a basis for comparing the applicant with other applicants, will be influenced by the purpose(s) for which selection is being carried out and by the practicability of implementing different methods of comparing applicants. For example, applicants could be compared on the basis of a single score or grade derived for each applicant from their various assessments, or applicants could be compared on the basis of each applicant's portfolio of assessed evidence.

2.2. Maximising the effectiveness/value of selection

Whatever the detailed approach to selection that might be adopted, any approach implicitly or explicitly will value certain outcomes more highly than others. For example, few selection procedures currently used by Australian universities are intended solely to select those applicants who have the greatest likelihood of success in the program for which they have applied. Often, the standard procedure is augmented by additional processes which seek to increase the number of admissions from various nominated equity groups. In this circumstance, the process is explicitly placing greater weight on achieving some diversity in the student population than it

is on maximising "success". Such judgements are common in selection processes, but often their nature is clouded by the apparent "even-handedness" of the process.

The clearest example of this is the adoption by most Australian universities of some form of single measure as the basis of university selection. As has been frequently canvassed, such an apparently simple measure encodes a great diversity of, often contradictory, factors. Achievement on such a measure is influenced, for example, by "merit", gender, socio-economic factors and educational history. There is little doubt that these and other factors each have different relationships to achievement in university programs and that society places different value on ensuring access for various specific groups. By utilising a single measure, the different values become inextricably bound and it is difficult, if not impossible, to know whether and to what extent, various specifically targeted populations are advantaged or disadvantaged in admission.

This issue was widely canvassed in the United States during the 1970s and led to the development of a number of conceptual models which allow for the specification of the different values which might apply to say, selecting those "most likely to succeed" and, simultaneously, to maximising the admission intake from a particular targeted population. These models of "fairness" (eg Gross & See, 1975 or Novick & Ellis, 1977) utilised the concept of "utility" adapted from the economics literature. While it is not appropriate to explore these here in any depth, the crucial issue which emerges from these studies is the importance of clearly and publicly identifying the relative importance which an institution or society places on the achievement of competing outcomes. If it is as important, for example, to ensure that VET students have access to higher education as it is to maximise the first year pass rate of those admitted, this has important ramifications for how a selection process should be structured.

Current selection procedures are making such judgements although they are often not made explicitly (or sometimes without any awareness of their implications). Rather they are buried within the system, neither subject to challenge nor to endorsement.

3. Competency-based Assessment

VET providers are bound by NFROT to adopt a competency-based approach to education and training. Contrary, however, to many widely-held views it has been possible for providers to reconcile this requirement with an approach to curriculum design and delivery that is not narrowly behaviourist but draws on current learning theory.

Moreover, while initially it was understood that a system based on competency standards required that achievement could only be reported in terms of "Competent/ Not Yet Competent", a debate has emerged in Australia which questions this assumption.

In this section, we report briefly on that debate and consider some of the main approaches being proposed for introducing graded assessment while maintaining the integrity of a competency-based system of vocational education and training.

3.1. Debates about grading assessment in CBT&A

The introduction of a competency-based vocational education and training system in Australia has been supported by all governments and by key employer and employee organisations. However, it has not been without its controversies and the question of how results should be assessed and reported has been key amongst these (see Thomson, Mathers & Quirk, 1996).

The decision to provide graded assessment is essentially a policy decision (Hager, Athanasou and Gonczi, 1994), and is influenced by its value to the learner and other clients. An assessment report specifying whether or not a person has achieved the competency as defined by the standard may be all that is needed for the purposes of credentialling applicants for licensing, for appointment to particular occupational classifications, or for recognition of entitlement to a particular level of wages. Some greater differentiation in assessment and reporting may be needed, however, where assessment reports will be used by people competing for promotion to a limited number of positions in their employment or for selection to a limited number of university places.

Considerations such as the needs of the client group may make the recognition of only a single level of achievement (for example, 'pass' or 'competent') preferable for some courses, the question is whether it should be required of all competency-based curricula delivered by the vocational education and training sector. What may be an appropriate assessment policy for, say, managers in the textiles, clothing and footwear industry may not be an appropriate assessment policy for students employed in financial services, enrolled in a Diploma in Accounting and intending on completion to apply for related university studies. Both need to demonstrate competence—and at a high level—but the kind of information required by other agencies may be quite different.

Competency-based assessment may be regarded as a form of criterion-referenced assessment, and, according to Wolf (1993), "grading and criterion-referencing are frequently discussed as though the two were antithetical". She demonstrates, however, that the principles integral to competency-based education and training do not necessarily preclude "graded assessment".

A distinction may be drawn between the principles that are integral to a competency-based education and training system and other principles to which particular individuals or groups using the system are committed and which they desire to see incorporated in the system. For example, 'grading' might be opposed on the grounds that it encourages competition in learning rather than cooperation in learning, or that it causes a feeling of failure and is detrimental to learning in those who receive low grades, or that it leads to a concentration of teaching effort on the more able students. As Hager et al. (1994) note, such objections to "grading" would apply to assessment whether it was competency-based or not.

Some arguments for the universal prohibition of "grading" are, however, specific to competency-based assessment within the National Training Reform Agenda.

One line of argument opposes grading on the pragmatic grounds that it will too readily result in norm-referencing rather than criterion-referencing, and undermine the foundations of competency-based education and training.

A second line of argument raises a question about whether or not "grading" is reconcilable with the vocational education and training system that has been established through the National Training Reform Agenda. It is argued that the nature of the qualification awarded in the current national competency-based system of vocational education and training is fundamentally different from any previous kinds of qualifications awarded, and that the nature of the new qualifications is incompatible with the use of "graded" assessment.

This view relies on the understanding that the award of a vocational qualification by a VET authority should in all cases depend on the attainment of workplace competence as defined by the relevant national standard. Indeed the original discussions which led to the establishment of the Australian Qualifications Framework essentially defined each of the six VET qualifications in terms of the related definition within the Australian Standards Framework (NTB, 1991). Such a strong position has not been sustained, however, and the recently published guidelines (MCEETYA, 1995b) do not make a firm equivalence between the two. This change arises partly from equity concerns. For example, a significant proportion of VET students are people in employment not related to the vocational course or program in which they are enrolled, people in related employment but without adequate workplace learning opportunities, or people in full-time education where workplace simulations may not be feasible. Dawe (1993), showed that only 40% of respondents to a national survey of TAFE students appeared to be undertaking courses related to current employment. 26% were preparing for future employment.

Similarly, in the UK, the award of National Vocational Qualifications (NVQs) tends to depend on individuals having had substantial opportunities for workplace learning and having been assessed in workplaces or "realistic workplace environments". Partly as a result of difficulties in providing these opportunities at the level required, a second kind of qualification has now been introduced into the NVQ framework: the General National Vocational Qualification (GNVQ). The introduction of GNVQs represents a recognition of the need to provide for the full range of people wanting access to vocationally relevant qualifications. In July 1993, the Government formally identified NVQs as "'the vocational route mainly for those who have left full-time education'...[and] GNVQs as the vocational route mainly for those in full-time education, and described advanced GNVQs as 'vocational A-levels'" (Smithers, 1993).

Moreover, in the case of GNVQs, provision is made for the reporting of "graded" assessment. (Business and Technology Education Council, 1993)

Wolf (1996) also notes that a significant factor considered by UK authorities has been the value of a more differentiated approach to reporting assessment outcomes for facilitating student learning. She notes that students have actively sought the provision of information beyond that conveyed by "Pass" alone.

As with the experience of the further education sector in the UK, assessment policy in Australia relating to VET qualifications is increasingly recognising that the option of grading can provide for a wider range of needs than those based solely on reporting "Competent/Not Yet Competent".

3.2. Models of graded assessment

Peddie (1993) argues that there are two broad options for an assessment process to recognise the achievement of merit:

- recognition of merit based on the achievement of the learning outcomes specified as essential for a module or course, for example, achievement at levels well beyond the standard set for a 'pass';
- recognition of merit based on factors beyond the achievement of the learning outcomes specified as essential for a module or course, for example, achievement of additional learning outcomes.

The achievement of additional learning outcomes has been considered by a number of writers. Additional learning outcomes are viewed as distinct from achievement on essential learning outcomes at levels well beyond the standard set for a "pass"; the distinction is not completely clear, however, as the additional learning outcomes would normally be related to the essential learning outcomes, and may represent more advanced applications of the essential learning outcomes.

Hager et al. (1994) are concerned that grading on extra work could be based merely on "diligence" rather than on the achievement of higher quality. Woodrow (1994) considers that grading on extra work would allow students to demonstrate more advanced skills and aptitudes, and could allow students to pursue their areas of interest, but also acknowledges that if, as was likely, project work were the basis for merit grades, assessment could be time-consuming, costly, subjective, and even invalid (given that, because project work was not tightly supervised, the extent to which a project was the outcome of a particular student's work could be difficult to determine); project work could also encroach on class time needed to teach essential outcomes.

A more acceptable option, in respect of "grading" achievement in a whole course, may be to include in the course structure a project to be graded which would enable the learner to demonstrate an integrated understanding and application of knowledge and skills learned across the course, and which would be assessed and graded using holistic criteria (Byrne, 1993). Such a project could constitute either a core module or an elective module in the course structure.

For the most part, the literature on "grading" is concerned with recognition of merit based on the achievement of the learning outcomes specified for a module or course, through the assessment of achievement at levels beyond the standard set for a "pass".

In principle criterion-referenced assessment can recognise various levels of achievement, using a number of "cut-offs". Alison Wolf (1993) makes explicit the capacity of criterion-referenced assessment to report different levels of achievement or degrees of merit :

> "Criterion-referenced assessment reports on performance in relation to an externally defined domain, but that does not mean that the only result is whether the performance matched the domain (achieved criterion level) or did not... Criterion-referenced assessments produce a 'distribution' of performance (or, in a formal sense, marks) in exactly the same way as any other assessment does. A single pass-fail line is ONE way to partition that distribution but only one."

She argues too that the number of cut-off points recognised should depend on the nature of the content of the program ("whether there are key, recognisable thresholds"). In fact, in the case of some outcomes such as "core skills" (or "key competencies"), assessment reports which recognise several grades of performance may be "much more true to the behaviour concerned".

Similarly, Wilmut and Macintosh (1994) argue that scope for differentiated outcomes from criterion-referenced assessment (such as grades) depends on what is being assessed. In their view, assessment of narrow task skills may be reportable only as "pass or not pass, or can do or cannot do", rather than in terms of degrees of merit or levels of achievement. They suggest that it is only when assessment is of more general attributes, and when it is possible to take a more continuous view of competence, that it will be possible to "determine attributes which characterise performance which goes beyond that required simply to pass, and which would be recognised as meriting greater recognition. In doing this we have moved beyond the elementary concept of mastery."

The number of cut-off points recognised may also be influenced by the purposes for which the assessment reports may be used (Hager et al., 1994; Wolf, 1993), and by practical considerations such as feasibility, cost-effectiveness and the need for assessor training. (Hager et al, 1994)

From the previous discussion, it would seem that:

- the recognition of different levels of successful achievement in a course is compatible with competency-based education, irrespective of the effect of such recognition (for example, ranking) or its purpose (for example, selection), provided that a criterion-referenced judgment is made about whether or not each individual learner has achieved the outcomes specified as essential for the module or course;
- whether or not different levels of successful achievement are recognised is essentially a policy decision. Such a policy decision would reflect the values and priorities of the policy makers and/or their clients:
- a decision not to "grade" could be based, for example, on the desire to develop cooperative rather than competitive attitudes through the course, because other means of recognising excellence are in place or because, for the particular learners involved, "grading" may not provide significant benefits and may even be alienating; even in cases where learners will be facing a selection process, a decision not to "grade" could be taken based on a view that selection is an issue for the selectors (such as employers or educational institutions) and should not be allowed to influence the assessment processes for a course;

- **a decision to "grade" could be based, for example, on grounds of access and equity, namely that if "pass/fail" assessments were imposed on qualifications in a system where the qualifications were being used for selection or progression, selection (whether for employment or further study) would be carried out much less fairly, based on factors such as the reputation of the college attended or the locations where individuals learned their skills (Wolf, 1993).**

While the literature clearly emphasises that, in a competency-based education and training program, judgments about the achievement of the specified outcomes must be based on criterion-referenced information, discussions about grading within a CBT system are often confused. Indeed, three broadly different approaches to this issue may be identified in the literature:

- the use of criterion-referenced assessment to
  - determine whether or not an individual has achieved the outcomes; and
  - to determine the degree of merit, or grade, the individual has achieved.
- the use of an assessment method that will provide both:
  - criterion-referenced information to recognise the achievement of essential outcomes; and
  - norm-referenced information (for purposes such as ranking).
- the use of criterion-referenced assessment to recognise the achievement of essential outcomes) and separate norm-referenced assessment (for purposes such as ranking).

In our view the last of these is rarely a justifiable approach and, moreover, is one which introduces a number of additional hurdles for students seeking university admission.

4. Options for an effective system

While current arrangements clearly have many desirable aspects, there are a number of difficulties which are clearly emerging.

While we have seen successes in the area of credit transfer, there appear still to be opportunities for both the VET sector and the university sector to cooperate even more effectively in providing opportunities for students in the VET sector to move into Higher education. In this section we explore some of these which we believe provide real opportunities for improving access.

Before looking at these options it is worth briefly considering why such options ought to be pursued. Firstly, as identified earlier, there is now a considerable body of evidence that, in many—if not all—disciplines, students entering higher education from the VET sector perform as well as or better than school leavers. Such students, therefore, do not claim the right to entry on affirmative action grounds but on the basis of demonstrated ability to achieve.

Secondly, national priorities require that opportunities are provided for members of the Australian workforce to upgrade their skills to reflect the increasing skill demands of many occupations. One significant pathway for the upgrading of skills is for individuals to progress within the set of qualifications established within the Australian Qualifications Framework. This necessitates an articulation system within which individuals can progress between qualifications as easily across sector boundaries as, theoretically, they can within sectors.

In the remaining part of this section we outline a range of options that MCEETYA might consider. These are:

- options for assessment procedures within the VET system, including the alternatives of taking no action beyond monitoring the emerging situation or adopting a policy to introduce graded assessment;
- options for university selection procedures, including the use of profiles, the use of quotas and using a wider range of information; and
- options for improved linkages between the sectors.

4.1. Options for assessment in VET

While considerable attention has been directed by the VET sector towards assessment in recent years, there is good reason to believe that assessment practice on the ground in and across VET providers does not always satisfy the high ideals which have been established by policy-makers (Thomson, 1990). It is likely, then, that further developments in policy, improved education and training for providers, and improved provision of resource support for assessment practice are all viable measures for improvement which VET systems and providers should be examining.

However, as the focus of this paper is on responding to the need to facilitate admission into Higher education, we will explore only those assessment options which could assist in reaching that goal.

Monitor existing developments

While universities have reported concerns about the possibility of ungraded assessments disadvantaging VET students, the issue is not seen by most VET systems as a major one. Moreover, VET systems are, as reported earlier, exploring the use of some form of grading.

A clearly desirable option, then, would be to take no firm policy position at this stage but rather to monitor the emerging situation and evaluate the effectiveness of the various alternative arrangements being introduced by State VET systems.

Introduce graded assessment

Another alternative is to accept the emerging policy position being adopted by states and agree on a national basis to the introduction of graded assessment within the framework of a competency-based system. If this were to be adopted, four options are possible:

a) Adopt graded assessment for all programs

This appears to be regarded by many commentators as "the obvious solution." Indeed most universities responding to a recent request for information on the admission issue suggested that VET should reintroduce graded assessment.

In principle, of course, there need be no inconsistency between an approach to vocational education and training which is competency-based and one which reports learner achievement through the use of grades. However, to adopt graded assessment on a widespread basis at this stage would create many difficulties for the VET sector.

These difficulties are both practical and cultural. In the first instance, significant development costs have been spent on transforming existing programs into competency-based formats many of which have chosen to use ungraded assessment. Depending on the approach to grading adopted, to rewrite these to include graded assessment could involve significant further resource commitments which are unlikely to be available. Moreover, most have been accredited for three years and are unlikely to undergo significant change before that time has elapsed.

More fundamentally, however, the move to CBT has involved a significant transformation of the culture of VET systems and providers. While CBT and ungraded assessment are not inextricably linked, the choice of ungraded assessment in many courses has been a deliberate choice made as part of that culture-shift. To abandon that change so soon after its adoption could be seen as a major reversal and undermine confidence in what, for its many difficulties, has been a successful and important revolution in Australian approaches to VET.

b) Introducing graded assessment in specific subjects

More realistic—and consistent with directions already underway in many VET systems—would be the adoption of graded assessment in significant modules which play defined roles in the overall structure of courses. Such modules might be capstone modules which integrate and summate skills and knowledge developed earlier in the program or key way-points which students (and

providers) may use to judge and guide choices of specialisation or choice. This option is explored in some detail by Peddie (1995).

If universities were aware that such modules or subjects had greater educational significance than others, there is evidence that they may be prepared to accord these higher weightings in allocating an admissions score to applicants holding such qualifications. It is likely that such an arrangement would provide a more accurate indication of likely success than would current, evenly-weighted, approaches.

c) Introducing optional grading at the election of the student

An option which has been suggested by some is that those students who may wish to proceed to higher education could elect to have results reported as grades in addition to those normally reported by the VET provider. In principle, this a quite feasible option. In practice, however, it has many drawbacks. These include the problems which would arise:

- where a student makes the election mid-way through a program;
- from the administrative overheads required because, in effect, two sets of "official" records would need to be kept;
- from the difficulty assessors may face in trying to, simultaneously, operate with two different sets of criteria.

Such an option might be viable where student numbers seeking transfer are low but it seems unlikely to be an acceptable option for VET systems which operate on a state-wide basis.

d) Grading qualifications rather than subjects

Historically, many TAFE qualifications were graded by cumulating the grades awarded to individual subjects and such an option could be retained.

However, Maxwell (1995) and others have suggested the option of grading the total qualification rather than grading each of its constituent subjects or modules. SCOTVEC, for example, adopt this approach for Scottish vocational qualifications. Two models appear to be commonly considered. The first involves the student in compiling a portfolio throughout the duration of their course which is then assessed to determine the grade to be awarded for the qualification. The second involves the inclusion of a specific module or assessment activity—usually project based—which integrates and encapsulates achievement across the whole course.

This, too, is a model which has attractions and difficulties. The attractions—especially in the second approach—stem from its simplicity. The difficulties are principally practical. VET students are generally quite mobile and change providers during their enrolment quite frequently. As a consequence, maintaining a secure and reliable record of performance across an entire qualification is difficult. The approach adopted in the UK and Scotland of grading the entire qualification on a final, integrative project-based assessment has proven to be problematic. Firstly, it is difficult to encapsulate in any one activity the entire diversity of a course, secondly and crucially, the existence of that single assessment has been found to significantly distort the entire teaching/learning process.

Provide parallel systems

A third approach has been used by some VET providers in the past specifically for the purpose of facilitating university admission. This has involved the creation and maintenance of two completely parallel systems of reporting assessment outcomes. In one case, students in a tertiary preparation course were awarded official results for each subject on a criterion-referenced grading system. At the same time, marks were recorded which were aggregated, scaled and moderated to produce a single, overall result which could be compared to the tertiary entrance score awarded to school leavers. This was provided directly to the universities.

This involved the VET provider in enormous overheads beyond what would be normally required of such a program and created pressures on teachers and students which were felt to be unreasonable.

While this program has shown such a system to be workable, it also raised serious questions as to its desirability. Moreover, the system was viable only because of the capacity of the provider to allocate resources pooled from across the system. In the increasingly decentralised context of VET provision, it is hard to see how such a system could now operate in many states.

4.2. Options for University selection procedures

Most universities' admissions policies allow for a wide diversity of applicants by providing a range of grounds on which applications may be made.

People may apply on the basis of qualifications issued in Australia by:

- secondary schools
- TAFE
- professional bodies
- higher education institutions

or on the basis of secondary or tertiary qualifications issued overseas.

At the time of application, such qualifications may be:

- already completed;
- currently being completed;
- only partially completed and discontinued.

Other bases on which people may apply include:

- mature age;
- relevant work experience;
- holders of professional qualifications;
- membership of an identified equity target group.

Applicants may cite multiple grounds in support of their applications. It is significant to note that none of the above makes provision for applicants with qualifications provided by non-TAFE VET providers.

In the case of the selection of current school leavers applying for admission to university courses, the use of an aggregate tertiary entrance score calculated from applicants' Year 12 subject results may be used to admit the school leavers most likely to complete a university course, to admit them in order of "merit" based on past

achievement, and to achieve the most efficient use of limited educational resources. These purposes, which could be regarded as consistent with one another, may be explicit or implicit. They influence the way in which tertiary entrance scores are calculated. For example, on the grounds that some subjects are more academically rigorous than others and on the assumption that performance in more academically rigorous subjects is more likely to result in achievement of these purposes than parallel performance in other subjects, a scaling system may reward performance in academically rigorous school subjects over performance in academically "soft options", and the number of "non-academic" specifically vocational subjects that may be included in the calculation of a tertiary entrance score may be limited.

For universities, the use of such tertiary entrance scores have a number of advantages, apart from their apparent value in achieving the explicit or implicit purposes of selection. The scores provide a single ranked list for putting offers to applicants into order of priority. This is a goal of many selection processes. The universities do not need to engage in the (often politically volatile) process leading to this goal: the determination of selection criteria and the development and implementation of methods for assessing applicants against the criteria.

In the case of the selection of VET-qualified applicants for admission to university courses, issues arising include:

- the purposes for which VET-qualified applicants are selected,
- the extent to which results issued by VET can be used by universities as a basis for selection,
- the extent to which VET results need to be supplemented by other information for selection, and
- the time and resources needed (and available) for universities to evaluate applicant information properly.

Develop profile-based approaches to selection

Probably the most problematic aspect of current Australian practice has been the development of the single tertiary entrance score as the basis for admission and selection. While its attractiveness as an administrative approach is unquestioned, its validity and cost-effectiveness can be challenged.

Even in the case of school leavers it is difficult to justify a system which does not utilise information available to it which would demonstrably improve its selection accuracy. For example, it has been known that by using information about performance in specific Year 12 subjects, prediction would be improved. In this vein, the QTAC system in use in Queensland is trying to improve its performance by utilising additional and more relevant information on the ability of school leavers.

In the case of VET graduates, however, this is even more the case. Here the students will, in the majority of cases, have studied specialised programs for which sometimes substantial credit transfer is available. Additionally, many will have substantial, relevant work experience.

The use of a diverse set of criteria—as provided by a profile—would permit not only better selection in the sense of a more accurate set of decisions, but is likely to provide for a fairer comparison to be made between different applicant groups.

Develop specific quotas

While it appears that universities are not generally supportive of the use of quotas, course-specific quotas for various groups are common in university admission arrangements, especially in regard to locally-developed articulation arrangements. Indeed a number of universities currently provide quotas specifically for VET graduates or include VET graduates in a "tertiary transfers" quota.

Universities could agree as a matter of policy that quotas could be set for some or all categories of applicants. Where a quota is created for VET-qualified applicants, decisions would be needed concerning the basis on which the size of the quota was determined, and, where the number of eligible VET-qualified applicants exceeds the size of the quota, the basis on which individual VET-qualified applicants are offered places in the quota. Such a policy is likely to be justified given the findings of the study reported in Dobson, Sharma and Haydon, 1996.

Given that the selection of VET-qualified applicants may be influenced by institutional policy, and/or policies adopted by individual Faculties, Schools or Departments, and/or the discretion of individual staff members, there is a need to ensure fairness and consistency in the selection process. In particular, there is a need to ensure that the selection process used for VET-qualified applicants is based on a defensible rationale, that clarifies the purposes of selection and identifies valid selection criteria and appropriate methods of assessing and comparing applicants.

Assess additional information

Universities have, understandably, been reluctant to explore selection approaches for VET students which involve the collection and management of a range of, often unpredictable, information. However, for many VET graduates, their range of experience will extend beyond the VET qualification itself. In this case, the best predictive assessment of their ability should draw on material additional to their qualifications.

To manage this kind of system appropriately, there is a need to specify clearly the purposes to be served, to determine the kinds of evidence that will be used to assess applicants against the criteria, and to determine mechanisms to balance conflicting purposes.

Evidence required could consist of:

- assessment result information issued by VET;
- assessment information issued by other education providers, including the applicant's previous secondary school results and tertiary entrance score;
- information other than educational assessment, for example work experience.

Such an arrangement is commonly applied by higher education institutions in the United States. There, a diverse set of arrangements have developed which collect and balance information to give the broadest possible picture of university applicants. These may provide useful guidance on how such a system could be developed in Australia.

4.3. Improving links between the sectors

While the options set out in the two sections above have been presented as ones which are principally the responsibility of the sectors separately, a different way of approaching the issue is also worthy of consideration.

Examples—though rare—already exist of extensive cooperative arrangements being established between universities and VET providers which are aimed at providing the best possible arrangements for students, the institutions and the community at large. Such arrangements should be considered further.

We have noted above that both universities and VET providers have a relatively low level of understanding of the needs and values of the other. This is clearly placing a limit on the ability of each sector to adapt their systems in ways which would facilitate mobility of students. Moreover, this is no longer a one-way system of transfers. University graduates now represent one of the fastest growing groups within the VET system and the volume of traffic from universities to TAFE now exceeds the flow from TAFE to university.

Some examples of ways in which cooperation between the sectors could improve selection processes are:

- cooperative investigation of the "value" of a grade of "competent" in a CBT system as compared with grades of "Pass", "Credit", etc awarded first under pre-CBT systems and, secondly, under grading systems within current approaches to CBT;
- cooperative development of systems of providing and managing supplementary information for VET graduates who seek higher education admission;
- examination of the value and practicability of differentially weighting modules within VET courses in calculating scores;
- discipline-based investigations of the programs offered by each sector which could lead to specific, informed decisions on appropriate selection and admissions criteria; and
- increased development of local arrangements, possibly along the lines of the Victorian "Pathways" projects. It should be noted, however, that such arrangements need to ensure that short-term parochial interests do not distort the achievement of equitable outcomes. Moreover, such arrangements should not be at the expense of providing reasonable opportunities for admission to those who fall outside the local agreement.

5. Conclusion

It is clear that VET systems are being encouraged from a range of perspectives to reconsider their policy concerning graded assessment. Many are already introducing new policy and procedural frameworks which will see the provision of graded results growing. However, it is of importance to note Thomson, Mathers and Quirk's (1996) conclusions:

> "Where grading is being implemented in Australia there appears to be a range of assessment approaches and assumptions operating....But any policy change on grading needs to be based on sound research and our work...suggests the alternative approaches need to be evaluated in a range of contexts....Undoubtedly the preferable way to proceed is to gather more evidence to determine the best course." (p.viii)

At the same time, a range of local and discipline-based arrangements have developed for implementing credit transfer opportunities and these provide models for further improving the understanding and interaction between the two sectors.

On balance it seems inappropriate that Ministers should consider any strong action at this time. The developing arrangements might be strengthened and supported but should also be monitored to ensure that individuals or groups are not disadvantaged during this transitional period.

6. Bibliography

Alaba, R., Lewis D. and Dawes, L (1993), *A review of credit transfer arrangements between TAFE and universities in New South Wales*, Evaluations and Investigations Program, DEET. AGPS: Canberra.

Business and Technology Education Council (1993), *Implementing BTEC GNVQs: A guide for centres*, BTEC: London

Byrne, Judy (1993), *The option of graded assessment in competency-based education and training*. NSW TAFE Commission: Sydney.

Dawe, Susan (1993), *A preliminary report of the pilot 1993 national client follow-up survey of vocational education graduates: A statistical report on performance measures*. NCVER: Adelaide.

Dawes, L., Athanasou, J. and Skelsey, K. (1993), "Credit transfer in NSW Universities: Practices and policies" in Alaba, R., Lewis D. and Dawes, L (1993), *A review of credit transfer arrangements between TAFE and universities in New South Wales*, Evaluations and Investigations Program, DEET. AGPS: Canberra.

Dobson, I., Sharma, R. and Haydon, A. (1996) *Evaluation of the relative performance of commencing undergraduate students in Australian Universities*. Australian Credit Transfer Agency: Adelaide.

Gross, A.L. and See, W. (1975) " Defining a 'fair' or 'unbiased' selection model: A question of utilities." *Journal of Applied Psychology*, vol 60, pp. 345-351.

Hager, P., Athanasou, J. and Gonczi, A., (1994) *Assessment Technical Manual*, AGPS: Canberra.

Hawke, Geof & Sweet, Richard (1983) *Some issues in access and selection. Occasional Paper 1*. TAFE National Centre for Research and Development: Adelaide.

Jessup, Gilbert (1989) "The emerging model of vocational education and training" in John Burke (Ed) *Competency Based Education and Training*, The Falmer Press: London.

Lewis, Donald E. (1994) *The performance at university of equity groups and students admitted via alternative modes of entry*. Evaluations and Investigations Program, DEET. AGPS: Canberra.

Lewis, Donald E., (1995) *Admissions and Enrolments, New South Wales and ACT Universities, 1991-1994: A Report Prepared for the Higher Education Unit, Ministry of Education and Youth Affairs*, Ministry of Education and Youth Affairs: Sydney

Maxwell, Graham (1995) "Future directions for competency based assessment." in Graham Maxwell (Ed) *Competency based assessment and tertiary selection: Issues and options*. TAFE Queensland: Brisbane.

MCEETYA, (1995a) *Australian Qualifications Framework: Making the most of achievements*. MCEETYA: Canberra.

MCEETYA, (1995b) *Australian Qualifications Framework Implementation Handbook*. MCEETYA: Canberra.

Messick, Samuel (1989) "Validity" in Robert L. Linn (Ed) *Educational Measurement*. American Council on Education, Macmillan: New York.

NCVER (1995) *Selected VET Statistics 1994*. NCVER: Adelaide.

Novick, M.R. and Ellis, D.D. (1977) "Equal opportunity in educational and employment selection." *American Psychologist*, vol. 32, pp. 306-320.

NTB (1991) *National Competency Standards: Policy and guidelines*. National Training Board: Canberra.

Peddie, Roger (1993) "Standards, levels, grades and merit: A critical analysis". Paper presented to the National Assessment Research Forum. VEETAC CBT Working Party: Sydney.

Peddie, Roger (1995) "Competency and selection: A discussion of the issues." in Graham Maxwell (Ed) *Competency based assessment and tertiary selection: Issues and options*. TAFE Queensland: Brisbane.

Rumsey, David (1994) *Assessment Practical Guide*, AGPS: Canberra.

Smithers, Alan (1993) *All our futures: Britain's education revolution*. Centre for Education and Employment Research, University of Manchester. Channel 4: London

Thomson, Peter (1990) *Testing times: A study of assessment on and off the job*. NCVER: Adelaide.

Thomson, Peter, Mathers, Roger and Quirk, Robert (1996) *The Grade Debate*. NCVER: Adelaide.

Toop, Leigh, Gibb, Jennifer and Worsnop, Percy (1994) *Assessment System Design*. AGPS: Canberra.

VEETAC, (1991) *National Framework for the Recognition of Training:: Report of the VEETAC working party on the recognition of training*. VEETAC: Canberra.

Wilmut, John and Macintosh, Henry (1994) "Options for differentiation amongst applicants for further study under a system of competency-based assessment in technical education." in G. Maxwell and C. Andrews (1994) *Getting them in: Final report of the review of selection procedures for TAFE Associate Diplomas and Diplomas in Queensland*. TAFE Queensland: Brisbane.

Wolf, Alison (1993) *Assessment issues and problems in a criterion-based system*. Further Education Unit: London.

Wolf, Alison (1996) personal communication to G. Hawke.

Woodrow, Elizabeth (1994) *Merit assessment in a competency-based course*. Assessment Centre for Vocational Education: Sydney. (Unpublished paper)